FCC 93-495

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 17	)	
of the Cable Television	)	ET Docket No. 93-7
Consumer Protection and	)	
Competition Act of 1992	)	
	)	
Compatibility Between	)	
Cable Systems and Consumer	)	
Electronics Equipment	)	

NOTICE OF PROPOSED RULE MAKING

Adopted: November 10, 1993 ; Released: December 1, 1993

Comments Due: January 10, 1994
Reply Comments Due: January 25, 1994

By the Commission:

Introduction

1. By this action, the Commission is proposing regulations for assuring compatibility between consumer electronics equipment and cable systems. These regulations will implement the statutory requirements set forth by Congress in Section 17 of the Cable Television Consumer Protection and Competition Act of 1992 (1992 Cable Act), enacted October 5, 1992.[1] The objective of this portion of the 1992 Cable Act is to ensure compatibility between consumer equipment and cable systems, consistent with the need to prevent theft of cable service, so that cable subscribers will be able to enjoy the full benefits of both the programming available on cable systems and the functions available on their television receivers and video cassette recorders (VCRs).

2. The rules we are proposing herein are based on the findings and recommendations in our recent "Report to Congress on

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[1] See Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460, (1992), §17. This proceeding is limited to issues involved in implementation of Section 17 of the 1992 Cable Act. We are addressing the implementation of other portions of this new legislation in separate proceedings.

Means for Assuring Compatibility Between Cable Systems and Consumer Electronics Equipment" ("Compatibility Report").[2] These proposals include measures that are intended to provide a significant degree of improved compatibility between existing cable and consumer equipment and also include provisions for achieving more substantial improvements in compatibility through the introduction of new cable and consumer electronics equipment.

Background

3. In the 1992 Cable Act, Congress recognized that there are a number of compatibility problems that arise between the provision of cable service and current consumer electronics equipment.[3] These problems include difficulties in the use of VCRs to record programming and in the operation of special features of TV receivers such as "Picture-in-Picture." In addition, current cable practices often prevent the use of customer-owned remote control devices, both those that are supplied with receivers and VCRs and universal remote control devices that could be used to control both cable set-top devices and consumer equipment. Finally, there appears to be confusion on the part of consumers about whether, and the extent to which, equipment is "cable ready" or "cable compatible." For example, current TV receivers and VCRs vary in their ability to tune the full range of channels offered by cable systems.

4. Section 17 Provisions. Section 17 of the 1992 Cable Act adds a new Section 624A to the Communications Act of 1934, that addresses compatibility between consumer electronics equipment and cable systems.[4] In Section 624A(a), Congress makes the following findings with regard to this matter:

- TV receivers and VCRs often contain premium features and functions that are disabled or inhibited because of cable scrambling, encoding, or encryption and by the use of cable devices, such as converters and remote control units, needed to receive programming;
- Consumers will be less likely to purchase, and electronics manufacturers will be less likely to develop, manufacture, or offer for sale, TV receivers and VCRs

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[2] See "Report To Congress On Means Of Assuring Compatibility Between Cable Systems and Consumer Electronics Equipment," adopted October 5, 1993.

[3] A more complete discussion of the various compatibility problems is provided in the "Compatibility Report," supra.

[4] See Section 624A, Section 17 of the 1992 Cable Act, supra.

with new and innovative features and functions, if these problems are allowed to persist; and,

- Cable operators should use technologies that will prevent signal thefts while permitting consumers to benefit from the features and functions contained in such television receivers and video cassette recorders.[5]

5. Section 624A(b) specifies that, within one year of the enactment of the legislation, the Commission, in consultation with representatives of the cable and consumer electronics industries, must report to Congress on means of assuring compatibility between TV sets, VCRs and cable systems, consistent with the need to prevent theft of cable service.[6] This section also provides that within 180 days of that report, the Commission must issue such regulations as are necessary to ensure compatibility between consumer electronics equipment and cable systems.[7] Section 624A(b) further provides that in issuing these rules, the Commission shall consider whether and, if so, under what circumstances to permit cable systems to scramble or encrypt signals or to restrict cable systems in the manner in which they scramble or encrypt signals. However, it further provides that the Commission shall not limit the use of scrambling technology where it does not interfere with the functions of subscribers' TV receivers or VCRs.[8]

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[5] See Section 624A(a), Section 17 of the 1992 Cable Act, supra.

[6] See Section 624A(b)(1), Section 17 of the 1992 Cable Act, supra.

[7] Under Part 76 of the Commission's current rules, cable systems are subject to technical standards that specify minimum performance with regard to the quality of NTSC (or similar format) video signals provided at subscriber terminals, 47 C.F.R. §§76.62 and .605; delivery of closed captioning information, 47 C.F.R. §76.606; and signal leakage, 47 C.F.R. §§76.601(e), .605, .609(h) and .610 - .617. NTSC is the analog television system currently used in the United States. Portions of the above rules also specify requirements for monitoring and measuring technical performance and resolving any interference resulting from cable system operation. The Commission's rules currently do not address compatibility between cable systems and extended features of subscribers' TV sets, VCRs and related equipment.

[8] See Section 624A(b)(2), Section 17 of the 1992 Cable Act, supra.

6. Section 624A(c) specifies that, in developing the rules required by Section 624A(b), the Commission is to consider:[9]

- The costs and benefits to consumers of imposing compatibility requirements on cable operators and TV manufacturers in a manner that, while providing effective protection against theft or unauthorized reception of cable service, will minimize interference with, or nullification of, the special functions of subscribers' TV receivers or VCRs, including functions that permit the subscriber to--
  -- watch a program on one channel while simultaneously recording a program on another channel;
  -- recording two consecutive programs that appear on different channels; and,
  -- use advanced television picture generation and display features, and;
- The need for cable operators to protect the integrity of the signals transmitted by the cable operator against theft or to protect such signals against unauthorized reception.

7. Section 624A(c) further specifies that the equipment compatibility regulations shall include:[10]

- Technical requirements with which a TV receiver or VCR must comply in order to be sold as "cable compatible" or "cable ready";
- Requirements that cable operators offering channels whose reception requires a converter unit--
  -- notify subscribers that they may not be able to use the special features of their TV receivers and VCRs;
  -- to the extent technically and economically feasible, offer subscribers the option of receiving all other channels directly, without passing through the converter unit;
- Rules to promote the commercial availability, from cable operators and retail vendors that are not affiliated with cable systems, of converter units and remote control devices that are compatible with converter units;
- Requirements that cable operators who offer subscribers the option of renting a remote control unit--
  -- Notify subscribers that they may purchase a remote control from any source that sells such devices;

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[9] See Section 624A(c)(1), Section 17 of the 1992 Cable Act, supra.

[10] See Section 624A(c)(2), Section 17 of the 1992 Cable Act, supra.

-- Specify the types of remote control units that are compatible with the converter unit supplied by the cable operator; and,
- Prohibit a cable operator from taking any action that prevents or in any way disables its converter units from operating with commercially available remote controls.

8. Finally, Section 624A(d) requires the Commission to review periodically and, if necessary, modify the regulations issued pursuant to this section in light of actions taken in response to the regulations and to changes in cable systems, TV receivers, VCRs and related technology.

9. The Compatibility Report. On January 14, 1993, the Commission adopted a Notice of Inquiry (NOI) seeking information and comment from all interested parties on the various issues relating to compatibility.[11] The Commission indicated that the information gathered under the NOI was to be used in preparing the report to Congress required under Section 17 and in formulating proposals for a subsequent rule making action to implement the compatibility regulations required under this portion of the 1992 Cable Act. Subsequently, representatives of the cable television and consumer electronics industries have worked together through the "Cable-Consumer Electronics Advisory Group" (CAG) to address the various topics in the matter of cable equipment compatibility. This group submitted a number of measures to address both short term and long term compatibility problems. A key element of these measures is the implementation of a "Decoder Interface."[12] This would be a new feature that would be incorporated in "cable ready" TV receivers and VCRs to enable use of component cable descrambler/decoders. The component descrambler/decoders would connect to a consumer device through a special Decoder Interface connector and would process signals after the unit's tuner. This would avoid the current problems caused by the use of set-top devices that disable features of consumer equipment related to tuning. The CAG plan further provided that cable systems that use scrambling would be required to provide component descramblers to subscribers that have Decoder Interface equipped receivers and VCRs.

10. In the "Compatibility Report," the Commission concluded that the most appropriate course of action for addressing the cable system/consumer electronics compatibility matter would be to: 1) provide immediate relief for the existing base of

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[11] See Notice of Inquiry, ET Docket No. 93-7, 8 FCC Rcd 725 (1993).

[12] Additional description of the Decoder Interface connector and the associated component descrambler/decoder is provided in the "Compatibility Report " supra.

consumer equipment; 2) require more substantial measures by both the cable and consumer electronics industries towards achieving significant compatibility in the near future; and, 3) encourage the development of consumer equipment and cable technologies that are more fully compatible in the long term. Consistent with this general plan, the Commission made a number of recommendations for specific steps to improve compatibility. These steps reflect the requirements for regulations specified in Section 17 and also include many elements of the plan suggested by the CAG. The Commission further indicated that these recommendations would form the basis for its proposals for compatibility regulations.

Discussion

11. In developing regulations to ensure compatibility between cable systems and consumer equipment, we intend to be guided by the principles set forth in Section 17 of the 1992 Cable Act. Consistent with Section 17, our primary goal in this matter is to improve the compatibility between cable systems and consumer electronics equipment so as to allow cable subscribers to use the special features and functions of their TV sets and VCRs when receiving cable service. We will also consider the needs and interests of cable operators in protecting their signals against theft or unauthorized use. We further believe it is important to provide for and encourage competition in the market for equipment used by subscribers to receive cable service. Such equipment includes channel converters, remote control units and other customer premises devices. Wherever possible, we intend to adopt regulations that will allow subscribers to use their own equipment, which could be obtained from retail vendors as well as cable system operators, to interface with the service provided by cable systems.

12. Proposals for Existing Equipment. We are proposing a number of requirements for cable systems that are intended to provide consumers with significant improvements in the use of their TV receivers and VCRs with cable service in the near term. First, we are proposing to require cable systems that use scrambling technology to provide supplementary equipment such as set-top devices with multiple descramblers and/or timers and by-pass switches to enable the operation of extended features and functions of consumer equipment that make simultaneous use of multiple signals. Cable systems would be required to provide this supplemental equipment at the request of individual subscribers and would be permitted to charge for the equipment and its installation in accordance with the rate regulation rules for customer premises equipment used to receive the basic service tier.[13] We are also proposing to require cable operators to

[13] See 47 C.F.R. §76.923.

provide their subscribers the option of having all signals whose reception does not require use of a converter to pass those signals directly to the subscriber's TV receiver or VCR, without passing through the set-top device. This capability could be provided through use of by-pass switches and similar equipment. We request comment on all aspects of our proposals for improving compatibility between cable systems that use scrambling and existing consumer equipment. We specifically ask that interested parties address the issue of whether and how cable systems should be allowed to charge for supplemental equipment needed to facilitate the operation of enhanced features of consumer equipment in light of the compatibility requirements of Section 17.

13. We are further proposing to prohibit cable systems from scrambling signals on the basic tier of cable service. This prohibition would ensure that consumers that have purchased TV receivers and VCRs that are capable of tuning basic service channels are able to continue to receive service on those channels without the need for a set-top device. We note that most basic services currently are carried unscrambled. We also observe that cable systems often include additional channels on their basic tier beyond those required to be on the basic tier under our rules.[14] We request comment on whether such signals should be exempted from the prohibition on scrambling of signals on the basic tier.

14. Consistent with the provisions of Section 17 regarding the operation of remote control features, we are proposing to require cable operators that offer subscribers the option of renting remote control units to operate set-top devices to permit the operation of their set-top devices with such commercially available remote control units, or otherwise take no action that would prevent the use of such remote control units. Cable operators would, however, be permitted to disable the remote control functions of a subscriber's set-top in cases where the subscriber so requests.

15. We are also proposing to require cable operators to provide a consumer education program on compatibility matters to

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[14] Section 76.901 of our rules provides that the basic service tier shall, at a minimum, include all signals of domestic broadcast stations provided to any subscriber (except a signal secondarily transmitted by satellite carrier beyond the local service area of such station, regardless of how such signal is ultimately received by the cable system), any public, educational and governmental programming required by the franchise to be carried on the basic tier and any additional video programming signals added to the basic tier by the cable operator. See 47 C.F.R. §76.901.

their subscribers. Cable systems would be required to provide this information in writing to their subscribers at the time they first subscribe and at least once a year thereafter.[15] The consumer education program would include a written notification that, in cases where a set-top device is used to receive service, subscribers may not be able to use special features and functions of their TV receivers, including functions that allow the subscriber to:

- View a program on one channel while simultaneously recording a program on another channel. This would apply for VCRs and any new recording equipment that might be introduced, such as a video disc recorder.
- Record two or more consecutive programs that appear on different channels.
- Use advanced picture generation and display features such as "Picture-in-Picture," channel review and other functions that necessitate channel selection by the consumer device.

Cable operators would further be required to inform their subscribers that some models of TV receivers and VCRs may not be able to receive all of the channels offered by the cable system when connected directly to the cable system, to briefly explain the types of channelization incompatibilities subscribers could encounter when connecting their equipment directly to the cable system and to offer suggestions for resolving channelization problems. Such solutions could include the use of a set-top channel converter device, to obtained from either the cable operator or by a third party retail vendor. We request comment on these consumer education proposals.

16. We are proposing to require cable systems that offer remote control capability with their set-top devices to include in their consumer education program a written notification that subscribers may purchase from other sources a remote control unit that is compatible with the cable system's. Cable systems would also be required to list the models of remote control units that are compatible with the set-top devices they employ and would be required to provide a list of sources of where those models can be obtained in the local area. This list would be required to be current as of no more than 60 days before the yearly mailing of consumer information. We request comment on the procedures cable operators should be required to follow in compiling the list of

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[15] After the initiation of service, cable systems would be permitted to choose the time and means by which to meet the annual consumer information requirement. For example, cable systems could choose simply to include the yearly consumer information on compatibility in a mailing with one of their regular billings to subscribers.

compatible remote controls and local sources where those units are available. For example, should the list be limited to models of remote controls that are currently available in the system's local area, or all models that are currently available nationwide. We observe that a broader listing requirement might lead consumers to seek a wider range of choices and thereby promote the availability of a wider selection of remote controls in the local area. We also request comment on how cable operators should compile lists of the remote controls that are available, including whether they should be required to survey the local retailers.

17. We believe that the above proposals for addressing the compatibility problems associated with existing cable systems and consumer equipment can be implemented relatively quickly. None of these proposals would appear to impose significant burdens on cable systems. These requirements can be met with existing models of supplementary equipment, minor reconfigurations of, or software changes to, existing cable facilities and preparation of relatively brief texts to inform consumer about compatibility problems and how they can be resolved. We therefore are proposing to make these requirements effective six months after we adopt the final rules in this matter. We request comment on all aspects of our proposals for improving compatibility problems between with existing cable system and consumer electronics equipment.

18. Proposals for New Equipment. We recognize that, given the limitations of existing consumer equipment and the current design of cable systems, the above measures would not provide a full solution to the current compatibility problems between cable systems and consumer equipment. More significant improvements in compatibility are obtainable through the introduction of new consumer electronics and cable equipment. Therefore, our regulatory approach for achieving a more complete resolution of these problems will need to focus on new consumer equipment and new/rebuilt cable systems. To promote full compatibility, we are proposing standards for new and rebuilt cable systems and for new consumer equipment. The new standards are intended to ensure that there is an efficient, effective interface between cable systems and consumer equipment intended for use with cable service. These standards are also designed to provide the flexibility needed to ensure compatibility through the transition from the existing analog cable and consumer equipment technologies to the new digital systems that are expected to be introduced in the future.

19. At this time, we believe the most practical solution for ensuring compatibility between scrambling technologies and the special features of consumer equipment is to require use of an updated Decoder Interface connector and associated component descrambler unit, as recommended by the CAG. We also believe

that the most appropriate approach for ensuring that consumer equipment is able to tune all of the channels available on whichever cable systems it may be connected to is to require both cable systems and consumer electronics equipment manufacturers to adhere to the amended EIA/IS-6 channel identification plan now being developed by the Joint Engineering Committee (JEC) of the Electronics Industries Association/ Consumer Electronics Group (EIA) and the National Cable Television Association.[16] Use of the Decoder Interface approach and EIA/IS-6 channelization plan, coupled with new tuner and shielding standards for cable ready consumer equipment, would avoid the need for use of set-top converter units in a cost effective manner for both cable systems and their subscribers.

20. To implement the above plan for new equipment and in accordance with the specific requirements of Section 17, we are proposing to adopt new standards for all consumer electronics equipment that is marketed as "cable ready" or intended for connection to cable service. These standards would require that cable ready equipment include a Decoder Interface connector that meets the specifications of the EIA/ANSI "Standard Baseband (Audio/Video) Interface Between NTSC Television Receiving Devices and Peripheral Devices" (EIA/ANSI 563).[17] As we observed in the "Compatibility Report," the CAG is now in the process of developing an updated version of this standard that provide a hybrid analog/digital Decoder Interface. We propose to adopt this updated standard as an alternative to the current version of EIA/ANSI 563 if the new standard is available in sufficient time for us to obtain comment on it before we compete our decision in this matter. We request comment on our proposals for use of the Decoder Interface connector and component descrambler/decoders to achieve compatibility between cable systems that use scrambling technologies and consumer TV receivers and VCRs.

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[16] The current standard is "EIA Interim Standard 6 (EIA/IS-6) Recommended Cable Television Channel Identification Plan," prepared by the EIA/NCTA Joint Engineering Committee Channelization Working Group (May 1983). According to discussions with members of the JEC, the amended EIA/IS-6 channel plan, to be designated EIA/IS-6A, will specify channels up to 1 GHz and include a formula for identifying additional channels above 1 GHz. The EIA indicates that the IS-6 channel plan is now in the process of being adopted by the American National Standards Institute (ANSI) as an EIA/ANSI standard. The EIA further indicates that the extended IS-6A plan will also be submitted for approval as an EIA/ANSI standard when it is complete.

[17] See "Standard Baseband (Audio/Video) Interface Between NTSC Television Receiving Devices and Peripheral Devices," EIA/ANSI-563-1990.

21. We are further proposing to require that all cable ready TV receivers and VCRs have the capability to tune all cable channels over a frequency range of 54 MHz to 1 GHz in accordance with the cable channel identification plan specified in the amended EIA/ANSI IS-6 standard.[18] We request comment on whether a 1 GHz upper boundary on the channel range of consumer equipment is an appropriate range of channels for cable ready equipment and on the economic and technical considerations associated with including 1 GHz tuners in consumer equipment. In this regard, we also ask interested parties to address whether it might be desirable to provide a "migration plan" to full 1 GHz capability that would first require a cable channel capability somewhat lower than 1 GHz, such as 750 MHz, and then later require full 1 GHz capability.

22. We are proposing that cable ready consumer equipment meet new requirements for improved receiver performance. Our proposals in this area are intended to ensure that consumers are able to receive cable signals clearly and to prevent interference. We are proposing standards to address the problems of adjacent channel interference, tuner overload, direct pick-up (DPU) interference and signal leakage. We are first proposing to require that cable ready equipment not exceed a criterion of "just perceptible" interference on the desired signal from an adjacent channel signal whose visual carrier level is 3 dB above the visual carrier level of the desired signal.[19] To avoid tuner overload, we are proposing to require that the tuners of cable ready consumer devices do not generate distortion products exceeding 55 dB below the visual carrier on any frequency in the desired channel.[20]

23. To address DPU and signal leakage, we are proposing to require that cable ready equipment not exceed a criterion of "just perceptible" interference in the presence of a 100 mV/m

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[18] We note that the current version of IS-6 accommodates full 1 GHz cable operation and that IS-6A will maintain the current channel allocations below 1 GHz. Under IS-6, a 1 GHz system would operate between 54 and 1002 MHz and would have the potential for 158 active channels.

[19] A 3 dB higher adjacent channel signal corresponds to the variation in adjacent channel signals permitted under Section 76.605(4)(i) of our rules, 47 C.F.R. §76.605(a)(4)(i).

[20] Tuner overload results from the presence of many strong signals that interact and degrade the performance of the receiver.

field generated by a CW source.[21] We are further proposing to require that the level of emissions conducted onto a cable system by a cable ready consumer device be no more than -37 dBmV, referenced to 75 ohms, over the frequency range 54 to 1002 MHz. In addition, we are proposing to require that cable ready units be tested to comply with the existing Part 15 limits on radiated emissions from unintentional radiators when connected to cable service.[22] In testing for such radiated emissions, we propose to require that compliance be demonstrated with input signals on six cable channels distributed evenly over the frequency range 54 MHz to 1002 MHz and that the signal level of the input cable signal be varied from 0 to 25 dBmV.[23] We are also proposing to apply these performance and testing requirements to cable system terminal devices.[24] We request comments on our proposals for performance standards for cable ready equipment. Commenting parties are specifically asked to submit suggestions regarding the methods and signal levels to be used in testing for compliance with these standards.

24. RF emissions can also leak from and/or enter into cable systems through input selector switches (A/B switches) used to alternate between service from a cable system, an antenna for reception of broadcast signals and other equipment such as a VCR

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[21] We also invite comment on the practicality of alternate test methods that do not rely on subjective observation of the television display. One alternative might be a method that directly measures the level of an interfering signal in the video baseband. We also believe that consumer equipment that complies with the DPU signal ingress standard will also be less likely to experience interference from both cable and off-the-air signals on the "image frequencies," i.e., frequencies that are removed 14 or 15 channels from the desired channel.

[22] The Part 15 emissions limits that apply to consumer TV equipment are set forth in Section 15.109(a) of the rules. See 47 C.F.R. §15.109(a). The tests for radiated emissions when connected to a cable signal would be in addition to the existing tests required for radiated emissions when connected to an antenna input. See 47 C.F.R.§15.31(n).

[23] We invite comment as to whether such tests should be required over the entire range from 0 to 25 dBmV, or whether testing only at the two extremes would suffice.

[24] Cable system terminal devices are TV interface devices that serve, as their primary function, to connect a cable system to a TV receiver or other subscriber premise equipment. See 47 C.F.R. §15.3. These devices are subject to the general Part 15 emissions limits for unintentional radiators, as set forth in Section 15.115(d) of the rules. See 47 C.F.R. §15.115(d).

or videodisc player if the switches do not provide adequate isolation between the various ports on the switch. Under the existing Part 15 rules, input selector switches used to alternate between cable and antenna service that are included in TV receivers and VCRs are required to comply with isolation standards.[25] We are proposing to clarify that these isolation requirements apply to all input selector switches that are used to alternate between cable and antenna input signals, including stand-alone units. We note that the input selector switch isolation rules currently are specified only for frequencies up to 550 MHz. We also recognize that it becomes more difficult to achieve high levels of isolation at higher frequencies and that the amount of isolation needed also decreases with increasing frequency. We therefore request comment on the appropriate limit or limits to specify for the frequency range from 550 MHz to 1002 MHz to conform with our proposal to require cable ready consumer equipment to be able to receive cable channels up to this frequency range. The extension of the input selector switch isolation standards we adopt would apply to all transfer switches used to alternate between a cable service and an antenna, including stand-alone units that are not part of a cable ready TV receiver or VCR.

25. We are also proposing to require that switches and other devices intended to be used to bypass cable set-top devices or other equipment not attenuate the input cable signals more than 6 dB at any output port. This requirement is intended to ensure that acceptable service is obtained when using supplementary equipment to improve compatibility between cable service and consumer equipment and would apply to both devices that are built into TV receivers and VCRs and stand-alone bypass switches and filters.

26. We believe the proposals set forth above constitute reasonable standards for cable ready consumer equipment that are practical to implement and would pose only a modest increase in costs for both equipment manufacturers and consumers. We request comment on the costs of implementing our proposals for cable ready equipment. Interested parties are asked to suggest alternative standards in cases where they believe that our proposals might be too burdensome. We also request comment on whether our proposals will adequately address the concerns to which they are directed and request alternative suggestions for addressing these issues.

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[25] See 47 C.F.R. §§15.115(c) and 15.117(h). These sections currently provide that transfer switches must provide 80 dB of isolation for signals in the frequency range 54 to 216 MHz and 60 dB for signals on frequencies from 216 to 550 MHz.

27. In view of the fact that these proposals would require substantial improvements in the technical performance of cable ready equipment, we are also requesting comment on whether we should subject cable ready TV receivers and component decoders/ descramblers to authorization under the notification or certification procedures, rather than the verification procedure to which these devices are currently subject.[26]

28. The JEC and the CAG have indicated that they will complete their work on the amended IS-6 plan and the updated Decoder Interface standard by the end of 1993. On this basis, we are proposing to require that all consumer electronics equipment manufactured or imported after December 31, 1996, that is marketed as "cable ready' or otherwise marketed as intended for connection directly to cable service comply with the new cable ready standards. We believe this 21 month period after finalization of the channelization and Decoder Interface portions of the standard will provide an adequate amount of time for manufacturers to comply with the new rules. We will, of course, review the new industry developed standards and provide an opportunity for public comment before including them in our rules.

29. On the cable side, we are proposing to require cable system operators to use "in the clear" signal delivery technology or to provide component descramblers/decoders and/or any additional equipment that may be needed to process scrambled and/or digital video service through the Decoder Interface connector. Consistent with this plan, we are also proposing to require cable systems to provide service in a form that is compatible with the Decoder Interface and component descrambler/ decoder equipment used with that connector where "in the clear" signal delivery methods are not used

30. Consistent with the recommendations in our "Compatibility Report," we are further proposing to require cable operators to provide component descrambler/decoders and any related equipment to subscribers without a separate charge for the equipment or its installation. Under this approach, installation and rental of component descramblers would be included as elements of the general cable network and therefore would not be recoverable by the cable operator through a separate charge.[27] Cable operators would be required to supply a

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[26] The verification, notification and certification procedures are set forth in Section 2 Subpart J of the rules. See 47 C.F.R. §2, Subpart J.

[27] The rate regulation rules do not allow separate charges for costs associated with operation of the general cable network. The costs of elements associated with the network therefore are

component descrambler/decoder for all subscriber equipment that is equipped with a Decoder Interface connector. They would not be permitted to apply separate charges for the component descrambler/decoder units, either for installation or for the units themselves. We believe this treatment of component descramblers/decoders and their installation as part of the cable network will best achieve the statutory goals prescribed in Section 17 of the 1992 Cable Act. This approach will encourage consumers to acquire and use new TV receivers and VCRs that are equipped with the Decoder Interface. By avoiding a source of incremental revenue, it may also encourage cable operators to use signal delivery methods that provide all purchased channels simultaneously, in the clear. Under either the clear channel or the component descrambler/decoder approaches for cable signal delivery, compatibility will be enhanced and consumers will be able to enjoy the full functioning of their TV receivers and VCRs. Our proposal to require cable systems to provide subscribers with component descramblers at no separate charge departs from our rate regulations regarding unbundling of charges for installation and lease of equipment used to provide service to subscribers.[28] Parties who believe that permitting a separate charge for this new equipment, as with our rate regulation of current equipment, would better achieve these goals should provide clear evidence to support that belief.

31. With regard to channelization, we are proposing to require cable systems built or re-built after one year from the effective date of the new rules to use the amended EIA/ANSI IS-6 channel plan for channels up to 1 GHz, consistent with our proposals for cable ready consumer equipment standards, and require all cable systems to use this channel plan after 10 years.[29] As the IS-6 standard has been substantially defined for some time and is already used by most cable systems, we believe one year is an adequate amount of time for new cable

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recoverable through subscriber revenues from regulated services offered on cable systems, e.g., tiers of programming services. See 47 C.F.R. §76.922.

[28] 47 C.F.R. §76.923. See Report and Order and Further Notice of Proposed Rule making, MM Docket No. 92-266, 58 Fed. Reg. 29736, paras. 410-412 (May 3, 1993); see also First Order on Reconsideration, Second Report and Order and Third Further Notice of Proposed Rule making, 58 Fed. Reg. 46718, September 2, 1993. These rules, inter alia, require unbundling of rates for cable programming services from rates for installation and lease of equipment used by subscribers to receive that service.

[29] We also seek comment on how the adoption of the EIA/IS-6 channel plan would affect the use of compression methods or multiplexing of cable channels.

systems and re-builds to comply with that standard. Cable systems would not have to activate channels for all of the channels specified in IS-6, but rather would be required to adhere to the frequency plan in this standard for the channels that they provide to their subscribers. We would also encourage cable systems to adhere to the IS-6 plan for channels above 1 GHz.

32. We believe our proposals for a long term solution offer the most cost effective means for achieving compatibility while also allowing cable operators flexibility in the security systems they employ to protect their programming from unauthorized reception. This plan would allow cable systems to continue to use scrambling systems to protect programming other than the basic tier of service. As described in the CAG's supplemental comments, the updated Decoder Interface to be built into new consumer receivers will provide capability to accommodate component modules that can process compressed digital signals as well as conventional scrambled signals. Thus, the Decoder Interface offers both a means for addressing the major current compatibility issue and a path for accommodating the next phase of technology expected to be introduced in the relatively near future. We believe the relatively modest increase in the cost of consumer equipment from the inclusion of a Decoder Interface and the cost of associated component descramblers/decoders constitutes a low cost solution for consumers.

33. While the supplemental equipment/Decoder Interface approach we are proposing appears to be the most practical solution for resolving the major problems of compatibility between cable systems and the special functions of consumer electronics equipment, we nonetheless believe the most desirable solution in this matter is for cable systems to use technologies that provide all authorized signals in the clear. We therefore intend to continue to encourage the use and development of cable signal delivery methods such as traps, interdiction, addressable filters and other clear channel delivery systems that eliminate the need for any additional equipment in the subscriber's premises. We also intend to examine any future developments in clear channel technology as part of our monitoring activities in this matter. We request comment on the above proposals and invite suggestions for alternatives that would ensure compatibility, with regard to both existing and future equipment, on a more convenient and cost effective basis while providing adequate security for cable signals. We also invite comment on the scheduling of the dates when cable systems and consumer equipment manufacturers should be required to comply with the new rules we will adopt. We note that neither Section 624A nor the legislative history address the issue of the schedule for compliance with the new rules. We seek comment on the schedule for implementing all aspects of new rules in this area.

34. In order to avoid future compatibility problems that could arise with the introduction of digital transmission methods by the cable industry, we also believe that it will be necessary to standardize the system used for digital transmissions. We invite comment on the development of a digital transmission standard for cable service. We request comment on the attributes of digital transmission service that would need to be standardized and possible candidate systems for such a standard. We note that the CAG believes it is feasible to establish standards for digital compression/decompression and a standard security interface system on a schedule that takes place over the next several years.[30] We recognize that developmental work in this area is still in progress and therefore request suggestions for a regulatory plan that would require completion of a digital cable transmission standard in a manner that would allow for timely and efficient introduction of consumer products that could receive service under the new standard. We will continue to monitor these developments to ensure that consumer interests are protected.

PROCEDURAL MATTERS

35. Pursuant to Section 603 of the Regulatory Flexibility Act, Pub. L No. 96-354, 94 Stat. 1164, 5 U.S.C. Section 601 et seq. (1981), the Commission has prepared the following initial regulatory flexibility analysis (IRFA) of these proposed rules on small entities. Written comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of this Notice, but must have a separate and distinct heading designating them as responses to the regulatory analysis. The Commission's Secretary shall cause a copy of the Notice, including the IRFA, to be sent to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act.

I. Reason for Action. Section 17 of the Cable Television Consumer Protection and Competition Act of 1992 requires the

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[30] The CAG believe that standards for the digital cable environment can be established per the following timetable:

1993: Define cable ready
1994: Define transmission and tuner specifications
No later than 1995: Set target dates for standards for decompression and a standard security interface system.

See "Supplemental Comments of the Cable-Consumer Electronics Compatibility Advisory Group," ET Docket No. 93-7, filed with the Commission July 21, 1993.

Commission to prescribe regulations for assuring compatibility between TV receivers and VCRs and cable systems. This Notice proposes rules to establish rules that will comply with the requirements of Section 17.

II. Objectives. The proposed rules are intended to assure compatibility between consumer electronics equipment and cable systems, consistent with the need to prevent theft of cable service. The goal of these regulations is to enable consumers to enjoy the full benefit of both the programming on cable systems and the functions available on their TV receivers and VCRs. The Commission also seeks to achieve these objectives in a cost effective manner for all parties involved.

III. Legal Basis. Authority for this rule making is provided in Sections 4(i), 4(j), 302, 303(r) and 624A of the Communications Act of 1934, as amended.

IV. Description, Potential Impact and Number of Small Entities Affected. The proposed rules would affect all of the more than 11,000 cable systems in this country and all manufacturers of TV receivers and VCRs. Initially, cable operators would be required to provide certain information about compatibility to their subscribers and to make available appropriate hardware for improving compatibility with existing consumer equipment. Cable systems would be able to charge for providing such hardware and its installation. After the cable ready receiver regulations become effective, receiver manufacturers will be required to include new features, including improved tuners and a Decoder Interface connector in all new TV receivers and VCRs. When these new cable ready consumer units are available, cable systems will be required to provide their subscribers a component descrambler/ decoder for each new cable ready receiver or VCR at no separate charge.

V. Reporting, Record Keeping and Other Compliance Requirements. The proposals under consideration in this Notice do not include new reporting and record keeping requirements for either cable systems or consumer electronics manufacturers.

VI. Federal Rules which Overlap, Duplicate or Conflict with the Proposed Rules. None.

VII. Any Significant Alternatives Minimizing the Impact on Small Entities and Consistent with Stated Objectives. Wherever possible, the Notice proposes rules intended to minimize costs for both cable operators and consumer electronics manufacturers. The major area where alternatives are possible concerns the use of the Decoder Interface as a means for avoiding use of set-top devices. These features will resolve the need for set-top devices and also provide a path to compatibility with future services that use digital compression. While the Decoder

Interface connector will be a new requirement for manufacturers, the cost of this feature can be recovered through a modest increase in the prices of TV receivers and VCRs. The amount of this increase is likely to be less for cable subscribers than the cost of technologies that would provide subscribers all authorized signals in the clear.

36. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, 47 CFR Sections 1.415 and 1.419, interested parties may file comments on or before January 10, 1994, and reply comments on or before January 25, 1994. All relevant and timely comments will be considered by the Commission before taking further action in this proceeding. To file formally in this proceeding, participants must file an original and four copies of all comments, reply comment and supporting comments. If participants want each Commissioner to receive a personal copy of their comments, an original and nine copies must be filed. Comments and reply comments should be sent to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239) of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554.

37. For further information concerning this Notice of Proposed Rule Making contact Alan Stillwell (202-632-7060) or Julius Knapp (301-725-1585), Office of Engineering and Technology, Federal Communications Commission, Washington, D.C. 20554.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
William F. Caton
Acting Secretary